

Application Serial No. 10/791,165
Amendment dated November 9, 2006
Reply to Final Office Action dated June 9, 2006

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (canceled)

Claim 2 (currently amended): The bushing according to Claim 44, wherein [[the]] an internal surface contour describing the final geometry of the opening is produced by the separation process.

Claim 3 (previously presented): The bushing according to Claim 44, wherein the retention structure is an integral component of the base plate or forms a structural unit with the base plate.

Claim 4 (previously presented): The bushing according to claim 44 wherein the bushing comprises at least two said metal pins in parallel arrangement to each other.

Claim 5 (previously presented): The bushing according to claim 44, wherein the metal pin is firmly connected with the fixing material.

Claim 6 (previously presented): The bushing according to Claim 5, wherein the metal pin is sealed with the fixing material.

Claim 7 (previously presented): The bushing according to claim 44, wherein a glass plug formed from molten glass or a high-performance polymer is the fixing material.

Claim 8 (previously presented): The bushing according to claim 44, wherein the retention structure comprises at least one undercut arranged between the rear side and the front side on the inner circumference of the opening in the base plate.

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Claim 9 (previously presented): The bushing according to Claim 8, wherein the undercut is formed by at least one projection.

Claim 10 (currently amended): The bushing according to Claim 9, wherein:

the opening has two sub-areas – a first sub-area which extends in a direction from the rear side ~~toward the front side~~ to a point between the front and rear sides and a second sub-area which extends in a direction from the front side ~~toward the rear side~~ to a point between the front and rear sides;

the projection is formed by the second sub-area, which has lesser inner dimensions than the first sub-area;

the first and second sub-areas have an unchanging geometry with constant inner dimensions over their length.

Claim 11 (currently amended): The bushing according to Claim 9, wherein:

the opening has two sub-areas – a first sub-area which extends in a direction from the rear side ~~toward the front side~~ to a point between the front and rear sides and a second sub-area, which extends in a direction from the front side ~~toward the rear side~~ to a point between the front and rear sides;

the projection is formed by the second sub-area, which has lesser inner dimensions than the first sub-area;

the first and/or second sub-areas have a variable geometry and/or different inner dimensions over their length.

Claim 12 (previously presented): The bushing according to Claim 11, wherein the first sub-area is characterized by a reduction of the dimensions starting from the front side to the second sub-area.

Claim 13 (previously presented): The bushing according to Claim 11, wherein the opening has a circular cross section and at least the first sub-area is tapered.

Claim 14 (previously presented): The bushing according to claim 8, wherein the undercut is centrally arranged.

Claim 15 (previously presented): The bushing according to claim 8, wherein:

an undercut in the opening is provided in both directions;

the opening has three sub-areas – a first sub-area which extends from the rear side toward the front side, a second sub-area adjacent to the first sub-area and a third sub-area which extends from the front side toward the rear side;

the second sub-area is characterized by lesser internal dimensions of the opening than the first and third sub-areas.

Claim 16 (previously presented): The bushing according to claim 8, wherein:

an undercut in the opening is provided in both directions;

the opening has three sub-areas – a first sub-area which extends from the rear side toward the front side, a second sub-area adjacent to the first sub-area and a third sub-area which extends from the front side toward the rear side;

the second sub-area is characterized by greater internal dimensions of the opening than the first and third sub-areas.

Claim 17 (previously presented): The bushing according to claim 15, wherein the first and third sub-areas are have identical cross section dimensions.

Claim 18 (currently amended): The bushing according to claim 9, ~~wherein a number comprising a plurality of projections are provided arranged in circumferential direction distanced to each other on a common length~~ circumferentially about said pin at a location between the front and rear sides.

Claim 19 (previously presented): The bushing according to claim 44, wherein the opening has a circular cross section.

Claim 20 (previously presented): The bushing according to claim 44, wherein the opening has a non-circular cross section.

Claim 21 (canceled)

Claim 22 (previously presented): The bushing according to Claim 44, wherein the stamped metal base plate is polished.

Claim 23 (currently amended): The bushing according to claim 44, wherein the retention structure comprises at least one positive interlocking connection between the fixing material and a part of the opening.

Claim 24 (previously presented): The bushing according to claim 44, wherein the retention structure comprises an element inserted in the opening and the inner circumference of the opening and/or the outer circumference of the element has a roughness of $\geq 10 \mu\text{m}$.

Claim 25 (previously presented): A bushing according to claim 44, wherein on the metal pin structure is provided for the prevention of motion of the pin relative to the fixing material.

Claim 26 (previously presented): The bushing according to Claim 15, wherein the structure for prevention of a relative motion of the pin to the fixing material comprises at least one projection in radial direction on the pin.

Claim 27 (previously presented): The bushing according to Claim 26, wherein the projection is an integral component of the pin.

Claim 28 (previously presented): The bushing according to Claim 26, wherein the projection is formed by an element connected to the pin.

Claim 29 (previously presented): The bushing according to claim 26, wherein the structure for the prevention of a relative motion of the pin to the fixing material comprises a number of projections adjoined in axial direction and in radial direction on the pin.

Claim 30 (previously presented): The bushing according to claim 44 wherein at least two metal pins are provided.

Claim 31 (previously presented): The bushing according to Claim 30, wherein the at least two metal pins are in parallel arrangement to each other.

Claim 32 (previously presented): The bushing according to claim 30, wherein one of the metal pins is grounded to the rear side of the base plate.

Claim 33 (previously presented): The bushing according to claim 44, including a further metal pin a socket of the base plate which is grounded.

Claim 34 (withdrawn): Method for manufacturing a base plate of a metal bushing according claim 1,

in which from one part, in particular a sheet metal part, of predefined thickness the final contour describing the outer geometry is gained by means of a separation process;

in which to form the slot for at least one metal pin the base geometry describing the starting form of the slot is gained by means of punching out of the part, in particular of the sheet metal part.

Claim 35 (withdrawn): Method according to Claim 34, characterized by the fact that the final contour describing the outer geometry gained by the separation process and the base geometry describing the starting form of the slot are produced in one processing step in the form of punching out with a tool.

Claim 36 (withdrawn): Method according to claim 34, characterized by the fact that the undercuts in the slots are formed by deformation of the slot.

Claim 37 (withdrawn): Method according to Claim 36, characterized by the fact that the deformation is achieved by means of at least one stamping operation.

Claim 38 (withdrawn): Method according to claim 36, characterized by the fact that the stamping and punching operations are performed from the same side on the base plate.

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Claim 39 (withdrawn): Method according to claim 36, characterized by the fact that the stamping and punching operations are performed from at different sides on the base plate.

Claim 40 (withdrawn): Method according to claim 36, characterized by the fact that the stamping and punching operations are performed on both sides on the base plate.

Claim 41 (withdrawn): Method according to Claim 40, characterized by the fact that either tools with the same parameters or the same tools are used for stamping and punching.

Claim 42 (withdrawn): Method according to claim 34, characterized by the fact that prior to the punching out of the slot in the area of the slot to be produced on the sheet metal part a stamping operation is performed.

Claim 43 (withdrawn): Method according to claim 34, characterized by the fact that the socket of the base plate is obtained after punching out by means of deep drawing.

Claim 44 (previously presented): A bushing assembly for igniters of airbags or belt tensioner pulleys, comprising:

- a stamped metal base plate having an opening therein, said base plate being formed by a single element and said opening being formed by at least one separation process, said base plate having a front side and a rear side;

- at least one metal pin extending from the rear side of said base plate and being fixed in said opening by a fixing material in the opening; and

- retention structure being provided between the front and rear sides of the base plate for prevention of motion of the fixing material relative to the base in a direction toward the rear side along the inner circumference of the opening.

Claim 45 (previously presented): The bushing assembly of claim 44 wherein the fixing material is a glass plug.